

Application No. 10/665,100
Amendment dated November 22, 2005
Reply to Office Action of August 24, 2005

Docket No. 1232-5157

REMARKS

Applicants respectfully request reconsideration of this application in view of the foregoing amendment and following remarks.

Status of the Claims

Claims 24-37 are pending in this application. Claims 24 and 31 are independent. All of the pending claims are rejected. By this amendment, claims 24, 25, 28, 29, 31, 32, 35 and 36 are amended. No new matter has been added by this amendment.

Rejection under 35 U.S.C. §102

Claims 24-26, 29 and 30 have been rejected under 35 U.S.C. §102 (b) as allegedly being anticipated by U.S. Patent Application Publication No. US2002/0042664A1 to Kikuchi ("Kikuchi").

Independent claim 24 has been amended for further clarification. In particular, amended claim 24 recites, *inter alia*, "processing the image data, with respect to each of the sample regions, with each of a plurality of signal processing methods to obtain a position of a region of the mark in the image data with respect to each of the plurality of signal processing methods." Amended claim 24 further recites "obtaining an expression approximately representing the positions of the plurality of regions based on positions obtained in said processing step with respect to each of a plurality of combinations of the sample regions and the signal processing methods." Support for the amendments may be found, for example, page 23, lines 25-27 of the original specification.

As explained Applicants' previous response, this feature of the invention enables a high-precision detection without detracting from the precision of alignment mark detection even in a

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case where there is an error in the position of an alignment mark formed on a wafer. See, for example, lines 17-23 of page 6 of the original specification.

Kikuchi discloses an evaluation method/apparatus for evaluating/eliminating a nonlinear distortion of part of a substrate in which a statistic computation is used using the measured position information to thereby calculate the degree of the nonlinearity. Paragraph 0040 of Kikuchi describes "a first position detection method, wherein said measured position information is in accord with position deviations of said divided areas..., and wherein by performing a statistic computation using said measured position information..." Paragraph 0048 of Kikuchi describes "the second position detection method..., wherein said nonlinear component of a piece of position information ... is calculated based on a single complement function..."

There is nothing in Kikuchi, however, that teaches the invention of claim 24 as amended, as discussed above including the "processing" and "obtaining" steps. It appears that Kikuchi's two methods are independent methods each other used depending on the number of the substrate (e.g., nth substrate).

Accordingly, claim 24 as amended is believed neither anticipated by nor rendered obvious in view of Kikuchi for at least the reasons discussed above.

Reconsideration and withdrawal of the rejection of claim 24 under 35 U.S.C. §102(b) is respectfully requested.

Rejection under 35 U.S.C. §103

Claims 27 and 31-37 have been rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kikuchi as applied to claim 24 in further view of U.S. Patent No. 4,962,318 to Nishi ("Nishi").

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Nishi is cited as disclosing an operational unit that determines the position of the shot areas.

Independent claim 31 has been amended in a similar manner to claim 24 as discussed above. In other words, amended claim 31 recites, *inter alia*, a first processing unit configured to process the image data, with respect to each of the sample regions, with each of a plurality of signal processing methods to obtain a position of a region of the mark in the image data with respect to each of the plurality of signal processing methods; and a second processing unit configured to obtain an expression approximately representing the positions of the plurality of regions based on positions obtained by said first processing unit with respect to each of a plurality of combinations of the sample regions and the signal processing methods, to evaluate approximation degrees of the expressions, and to select a combination of the sample regions and the signal processing methods based on the evaluation.

As Applicants understand it, none of the cited art of record (i.e., Kikuchi and Nishi) shows or suggests this feature of the present invention as featured in amended claim 31.

Accordingly, amended claim 31 is believed neither anticipated by nor rendered obvious in view of Kikuchi and Nishi, either taken alone or in combination, for at least the reasons discussed above.

Reconsideration and withdrawal of the rejection of claim 31 under 35 U.S.C. §103(a) is respectfully requested.

Applicants have not individually addressed the rejections of the dependent claims because Applicants submit that the independent claims from which they respectively depend are in condition for allowance as set forth above. Applicants however reserve the right to address

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such rejections of the dependent claims should such be necessary.

Applicants believe that the application is in condition for allowance and such action is respectfully requested.

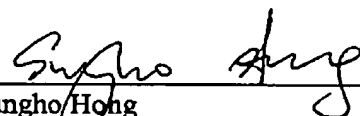
AUTHORIZATION

No petitions or additional fees are believed due for this amendment and/or any accompanying submissions. However, to the extent that any additional fees and/or petition is required, including a petition for extension of time, Applicants hereby petition the Commissioner to grant such petition, and hereby authorizes the Commissioner to charge any additional fees, including any fees which may be required for such petition, or credit any overpayment to Deposit Account No. 13-4500 (Order No. 1232-5157). A DUPLICATE COPY OF THIS SHEET IS ENCLOSED. An early and favorable examination on the merits is respectfully requested.

Respectfully submitted,
MORGAN & FINNEGAN, L.L.P.

Dated: November 22, 2005

By:


Sungho Hong
Registration No. 54,571

Correspondence Address:

MORGAN & FINNEGAN, L.L.P.
3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 (Telephone)
(212) 415-8701 (Facsimile)

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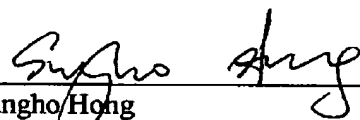
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3 World Financial Center
New York, NY 10281-2101
(212) 415-8700 (Telephone)
(212) 415-8701 (Facsimile)